NJD 002 186 690

19 D

2006 DATA UPDATE TO THE RCRA ENVIRONMENTAL INDICATOR CA750 REPORT DETERMINATION OF CURRENT OF RELEASES TO GROUNDWATER CONTROLLED

GM LINDEN FACILITY
LINDEN, NEW JERSEY
US EPA ID #NJD002186690
NJDEP CASE NO. 95-01-25-1618-35

by

Haley & Aldrich, Inc.
Cleveland, Ohio

for

ENCORE
Pontiac, Michigan

File No. 28499-317
March 21, 2007

NJD 002-186-690

19D

2006 DATA UPDATE TO THE RCRA ENVIRONMENTAL INDICATOR CA750 REPORT DETERMINATION OF CURRENT OF RELEASES TO GROUNDWATER CONTROLLED

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1. INTRODUCTION

The Resource Conservation and Recovery Act (RCRA) Environmental Indicator (EI) CA750 Report, Determination of Current Groundwater Releases Controlled was prepared as part of the RCRA corrective action that General Motors Corporation (GM) is conducting at the Linden Assembly Plant located at 1016 West Edgar Road in Linden, New Jersey (hereafter referred to as the "Facility") (Figure 1) under the oversight of Region 2 of the U.S. Environmental Protection Agency (USEPA). The GM Linden Facility's identification number is NJD 002 186 690. The voluntary RCRA corrective action also addresses provisions in a Memorandum of Agreement between GM and the New Jersey Department of Environmental Protection (NJDEP) dated February 27, 1995 (Case No. 95-01-25-1618-35).

The CA750 Report was submitted on September 27, 2005; signed and accepted by the USEPA on September 30, 2005. This Data Report provides an update of the subsequent groundwater monitoring efforts since the submittal of the CA750 Report and the Resource Conservation and Recovery Act (RCRA) Facility and New Jersey Remedial Investigation Report Addendum (February 7, 2006) (RFI/RI Report Addendum). The following sections provide an update where the new data may provide further understanding of the hydrogeologic conditions and/or groundwater contaminant distribution beyond that reported in the CA750 or RFI/RI Report Addendum.

2. ADDITIONAL INVESTIGATION ACTIVITIES

The RFI/RI Report Addendum, which was submitted subsequent to the CA750 Report, provided an update to the Environmental Setting section of the RFI Report, including Site hydrogeology and groundwater flow patterns. The additional groundwater investigation conducted subsequent to the CA750 Report, and summarized in the RFI/RI Report Addendum, included the following activities:

- Monitoring Well installation: MW-14B2, MW-60W, MW-60B3, MW-64W, MW-72S, MW-72W, MW-72B, MW-86S, MW-87S, MW-88W, and MW-89W,
- August/September 2005 Groundwater Sampling of Site Wells (140 wells),
- November 2005 Groundwater Sampling of Selected Wells (71 wells), and
- October, November, December 2005 and January 2006 Groundwater Elevation Measurements.

The June 2006 Data Update to the RFI/RI Report Addendum (June 16, 2006) provided a summary of additional groundwater investigation that was conducted subsequent to the RFI/RI Report Addendum. The additional investigation included the following activities:

- Interior Monitoring Well Installation: MW-56B4, MW-64B2, and MW-89B2,
- February 2006 Groundwater Sampling Event of Selected New Monitoring Wells (44 wells), and
- February, March, April, and May 2006 Groundwater Elevation Measurements.

Subsequent to the June 2006 Data Update, groundwater monitoring was conducted in:

- May 2006 - Selected New Monitoring Wells (25 wells),
- August 2006 CA750 Annual Groundwater Sampling Event (97 wells),
- October 2006 - Selected New Monitoring Wells (11 wells), and
- June, July, August, September, October, November, and December 2006 Groundwater Elevation Measurements.

The current well location plan is shown on Figure 2. The contours of groundwater potentiometric surface for the August, October and December 2006 measurement events are shown on Figures 3 through 8 for each of the monitoring zones. The groundwater analytical results from 2006 results are shown on Figures 10 through 22 for each of the monitoring zones. A tabular summary of the RFI groundwater analytical data through 2006 is also provided on the e:DAT CD contained in Appendix A.

3. CA750 UPDATE

The following sections update each of the zones/groups as discussed in the CA750 Report and RFI/RI Addendum.

3.1 Group 1 (northwest(PN))

3.1.1 Overburden

The 2006 groundwater analytical data and groundwater flow patterns remain consistent with the findings of the CA750 report.

3.1.2 Weathered Bedrock

The 2006 groundwater flow patterns remain consistent with the findings of the CA750 report. Monitoring well MW-18W had an exceedance of trichloroethene (TCE) at 0.023 mg/L in the August 2006 sampling event, which is above the drinking water criterion. This concentration is somewhat higher than the result reported for 2005, but is within the range of concentrations reported for sampling prior to 2005. At the next down-gradient monitoring well, MW-57W, TCE continues to be not detectable. As discussed in the CA750 report (Sections 2.7.4.2 and 3.2.1.2), groundwater in the vicinity of MW-18W and MW-57W is captured by the sanitary sewer aligned with Smith Street. Therefore, the 2006 results do not change the findings of the CA750 report.

3.1.3 Bedrock Flow Zone #2

Three new monitoring wells (MW-14B2, MW-15B2, and MW-64B2) have been completed since the CA750 Report, which have better characterized groundwater flow pattern and contaminant distribution in this area of BFZ #2. Water level elevation data currently suggests a north(PN) to northeast(PN) groundwater flow pattern. This change in pattern from the CA750 was discussed in Section 3.3.3 of the RFI/RI Report Addendum, and may be attributable to boundary conditions to the east of the Site, such as Morses Creek, as well as seasonal fluctuations and changes in Merck's groundwater recovery efforts.

Monitoring wells downgradient of the suspected source in the Paint Mix Building area on the GM Facility (MW-64B2, MW-15B2 and MW-14B2) have indicated exceedances of several VOCs greater than their respective drinking water criterion. As discussed in the RFI/RI Report Addendum, similar to the weathered bedrock interval, VOCs have been detected in BFZ #2 between the Paint Mix Building and the Merck North Plant Landfill. Further, as discussed in Section 2.8 of the RFI/RI Report Addendum, BFZ #2 subcrops to the weathered bedrock beneath both the Paint Mix Building and the Merck North Plant Landfill. Thus, it is believed that both areas have impacted BFZ#2.

The presence of bis(2-chloroethyle)ether (BCEE), chlorobenzene, and other VOCs unrelated to the GM Facility in many of the wells in BFZ#2 indicates that groundwater in this area is most significantly affected by the North Plant Landfill.

Specifically, a review of the concentrations of TCE, BCEE, and chlorobenzene in BFZ#2, from east(PN) to west(PN), indicate an approximate 10-fold increase in groundwater concentrations with increasing westward(PN) distance from the Paint Mix Building, with the highest detected concentrations of both constituents at MW-47B which is located just west of the Merck Landfill. Further, BCEE and chlorobenzene have been detected at concentrations exceeding screening criteria as far east(PN) as MW-14B2, which indicates that the Merck Landfill has had and continues to have an influence on groundwater quality under much of the GM Linden Facility.

As discussed above, the groundwater flow pattern for BFZ #2 appears to have shifted from west(PN) to primarily north-northeast(PN). This shifting may be related to seasonal, pumping stresses, or a combination of factors influencing the discharge boundaries of BFZ #2. The discharge boundary to the west(PN) is likely Merck pumping and the Rahway River, and to the east(PN) is likely Morses Creek. The boundaries, coupled with the sloping top of bedrock and sloping top of subcrop to the east(PN), likely explain the wide eastern(PN) distribution of contaminants attributable to the Merck Landfill including the detections of BCEE, chlorobenzene, and 1,2-dichlorethane at MW-15B2 and/or MW-14B2. Down-dip groundwater flow has been found by Merck to be limited by a decrease in permeability with depths of over 300 to 500 feet (Merck 2005), thus down-dip contaminant migration is likely limited. Monitoring well MW-16B, which is the eastern(PN)-most BFZ #2 well, define the limit of the groundwater contamination to the east(PN). The Merck monitoring wells and pumping activities, to the west(PN) define the limit of groundwater contamination in that direction. Therefore, the limits of groundwater contamination in the BFZ#2 from the Facility, for all practical purposes, continue to be defined and appears to be stable.

3.2 Group 2 (southwest(PN))

3.2.1 Overburden

The 2006 groundwater analytical data and groundwater flow patterns remain consistent with the findings of the CA750 report.

3.2.2 Weathered Bedrock

The 2006 groundwater analytical data and groundwater flow patterns remain consistent with the findings of the CA750 report.

3.2.3 Bedrock Flow Zone #3

The 2006 groundwater analytical data and groundwater flow patterns remain consistent with the findings of the CA750 report.

3.2.4 Bedrock Flow Zone #4

TCE was detected at MW-56B4 slightly above the drinking water criterion during each of the last three sampling events. These concentrations may relate to the detections in the weathered bedrock in Group 3. The groundwater flow pattern for this area indicates that MW-17B is the next down-gradient monitoring well, which

remains below drinking water criteria. Thus, it appears that the nature and extent of the contamination is adequately defined and appears stable. Therefore, the 2006 groundwater analytical data and groundwater flow patterns do not change the findings of the CA750 report.

3.3 Group 3 (southeast(PN))

3.3.1 Overburden

Lead was detected at MW-61S above the drinking water criterion during the November 2005 and February 2006 groundwater sampling events. As identified in the CA750 report and RFI/RI Report Addendum, groundwater in this area of Group 3 for the Overburden is captured by the sanitary sewer in West Edgar Road. Therefore, the 2006 groundwater analytical data and groundwater flow patterns do not change the findings of the CA750 report.

3.3.2 Weathered Bedrock

Trichloroethene was detected at MW-56W above the drinking water criterion during each of the last three sampling events. These concentrations may relate to other detections in the weathered bedrock in Group 3. The groundwater flow pattern for this area indicates that MW-17W is the next down-gradient monitoring well, which remains below drinking water criteria. Thus, the nature and extent of the contamination is adequately defined and appears stable. In addition, as identified in the CA750 report and RFI/RI Report Addendum, groundwater in this area of Group 3 for the Weathered Bedrock is captured by the sanitary sewer in West Edgar Road. Therefore, the 2006 groundwater analytical data and groundwater flow patterns do not change the findings of the CA750 report.

3.4 Group 4 (northeast(PN))

3.4.1 Overburden

The 2006 groundwater analytical data and groundwater flow pattern remain consistent with the findings of the CA750 report.

3.4.2 Weathered Bedrock

Trichloroethene TCE was detected at MW-72W above drinking water criterion during each of the last four sampling events. These concentrations are similar to the detections at MW-70W and MW-45W, and may relate to detections of TCE in BFZ #1. As discussed in the RFI/RI Report Addendum, these detections may be related to an off-site source. The purpose of MW-72W was to provide additional water level control around the storm sewer beneath Linden Ave. Unfortunately, due to inaccessibility of locations closer to MW-70W and MW-45W and the storm sewer, water levels at MW-72W do not provide sufficient level control to ascertain the influence of the storm sewer. Based on the available information on-site, the storm sewer remains a controlling feature in this area. Regardless of the source and the influence of the storm sewer, groundwater in this area likely discharges either directly or indirectly via the storm sewer to Morses Creek, which is located approximately

900 feet east(PN) of the Facility, as discussed in the RFI/RI Report Addendum. The potential impact of these concentrations on surface water is discussed in Sections 3.4, 3.5 and 3.6 of the CA750 report, which indicates that potential discharges to Morses Creek would be within acceptable levels. Therefore, the 2006 groundwater analytical data and groundwater flow pattern do not change the findings of the CA750 report.

3.4.3 Bedrock Flow Zone #1

Trichloroethene was detected at MW-72B above the drinking water criterion during each of the last four sampling events. These concentrations are similar to those detected at MW-45B, which is up-gradient. Both monitoring wells MW-45B and MW-72B had detections of constituents that appear to be unrelated to the GM Facility, thus the source of these detections is uncertain. Regardless, as discussed in the CA750 report, the groundwater flow pattern for this area indicates groundwater discharge is likely to Morses Creek, east(PN) of the GM Facility. The potential impact of these concentration on surface water is discussed in Sections 3.4, 3.5 and 3.6 of the CA750 report, which indicates that potential discharges to Morses Creek would be within acceptable levels. Therefore, the 2006 groundwater analytical data and groundwater flow patterns do not change the findings of the CA750 report.

3.5 Continued Groundwater Monitoring

The proposed groundwater monitoring program described in the CA750 report is currently under review and a revised program will be submitted under separate cover. The next groundwater sampling event is currently scheduled for August 2007.

3.6 Conclusion

Evaluation of the 2006 groundwater analytical data and groundwater flow patterns indicates that they do not change the findings of the CA750 report and the migration of contamination groundwater remains under control.

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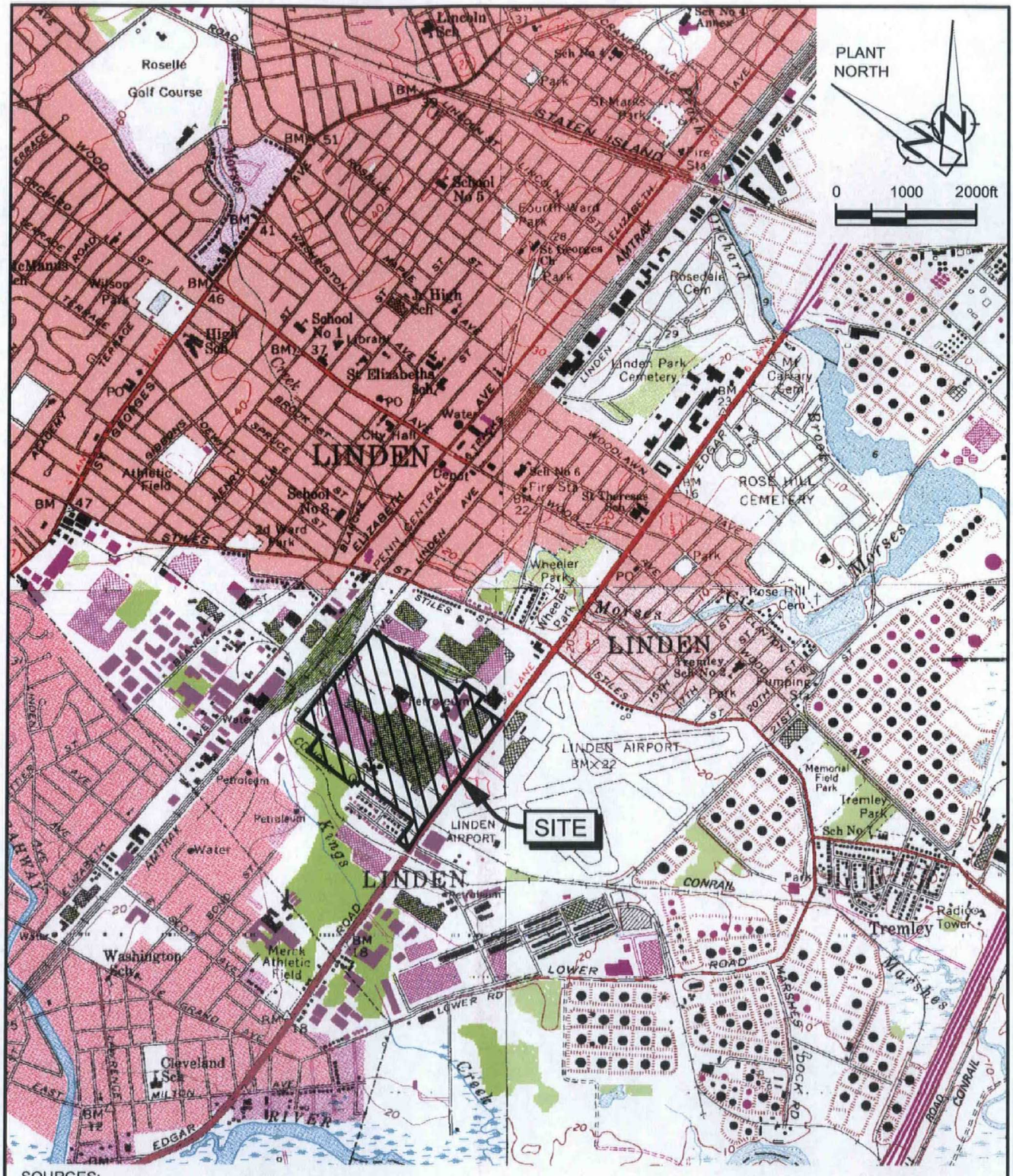


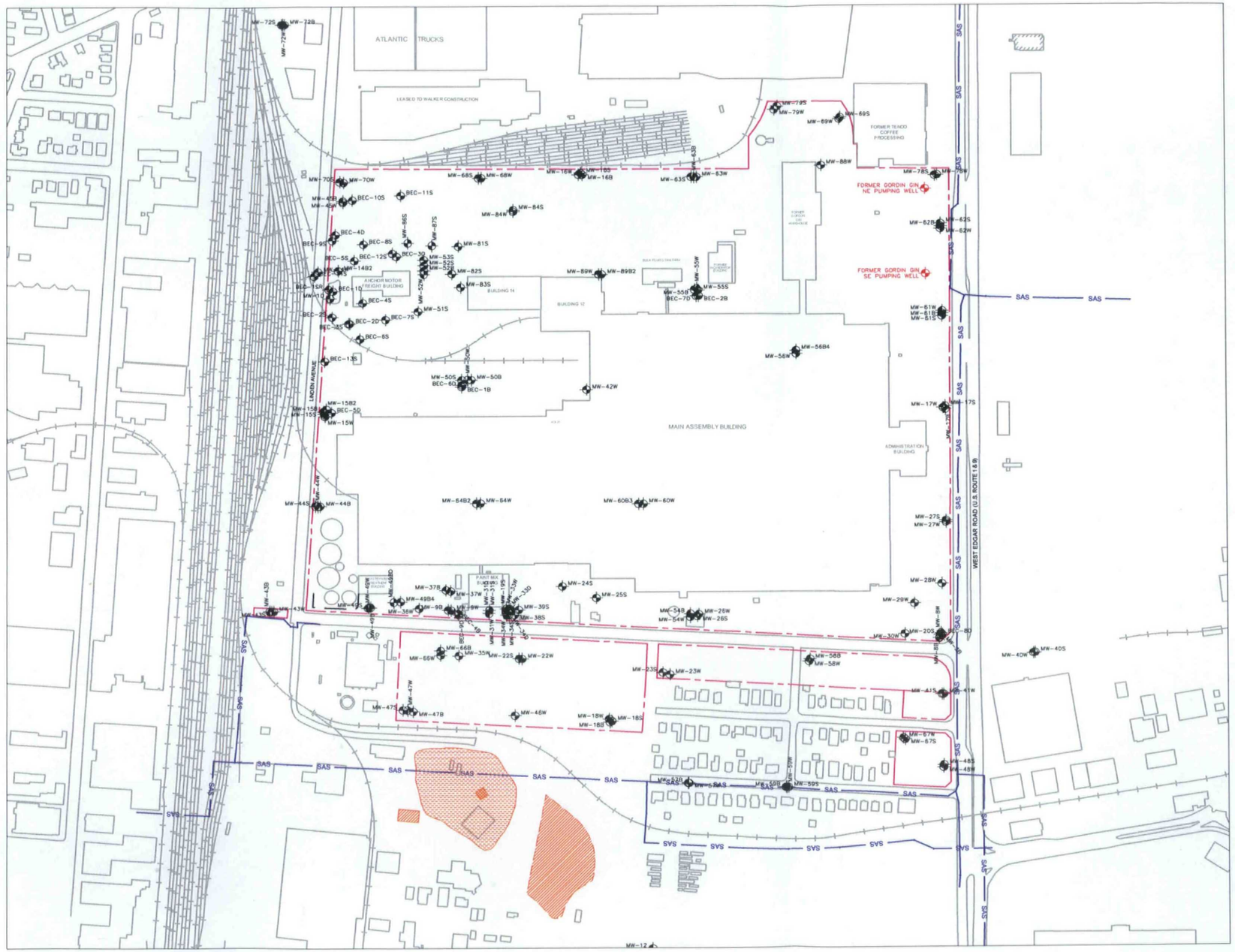
SOURCES:
USGS QUADRANGLES, PHOTOREVISED 1981:
ARTHUR KILL, N.Y.-N.J.
PERTH AMBOY, N.J.
ELIZABETH, N.J.-N.Y.
ROSELLE, N.J.

figure 1

FACILITY LOCATION
GENERAL MOTORS VEHICLE MANUFACTURING-LINDEN ASSEMBLY

Linden, New Jersey

17371-00(PRES019)GN-WA002 JUL 25/2005



PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- SAS — SANITARY SEWERS
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

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GENERAL MOTORS VEHICLE MANUFACTURING
LINDEN ASSEMBLY
LINDEN, NEW JERSEY

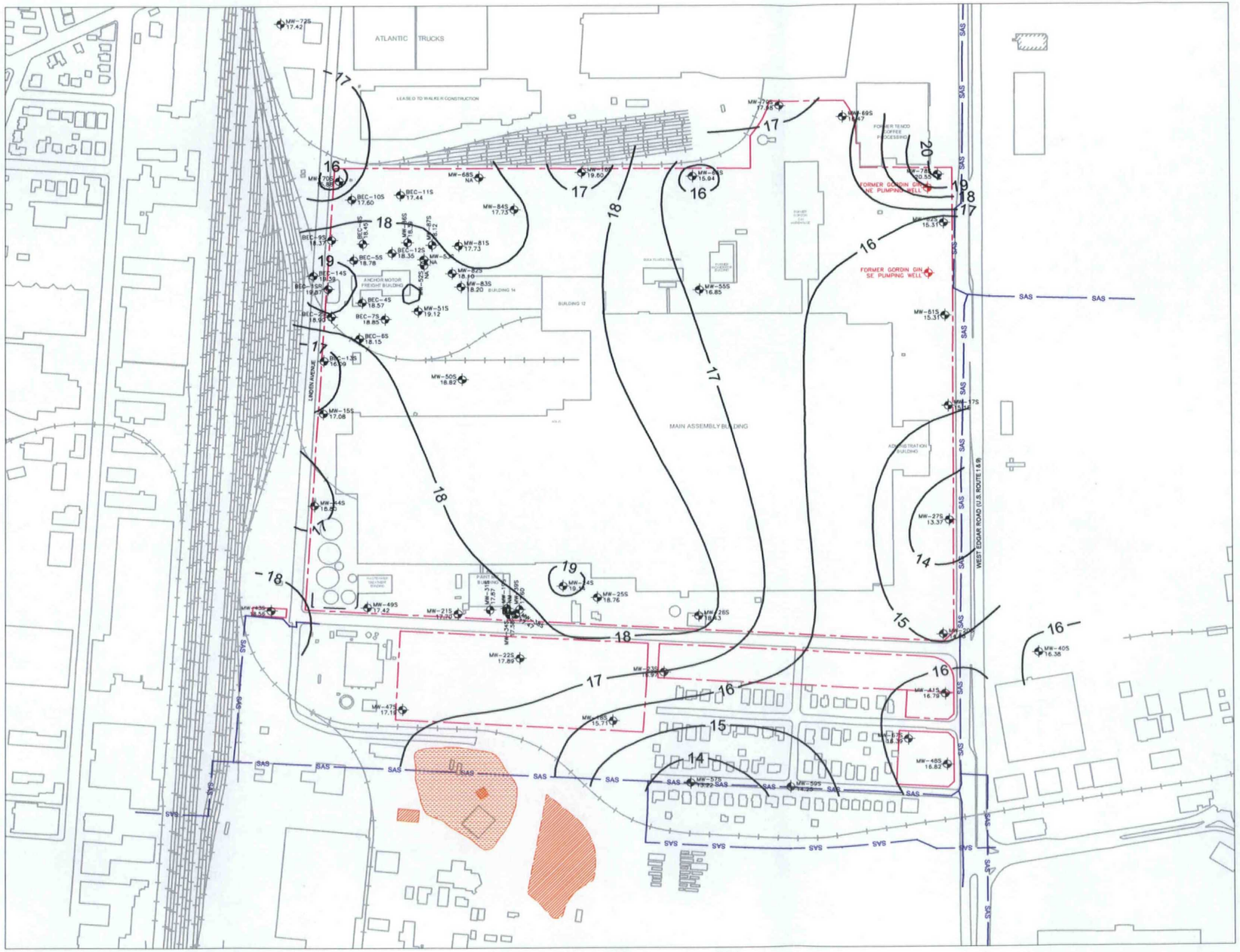
WELL LOCATION PLAN

SCALE: AS SHOWN

MARCH 2007

FIGURE 2

G:\128499\AUTOCAD\LOCATION PLANS\128499-LOCATION_PLAN-MARCH07.DWG



PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED AUGUST 4, 2006.
2. MW-52S AND MW-53S EXCLUDED FROM GROUNDWATER CONTOURS.

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LINDEN ASSEMBLY
LINDEN, NEW JERSEY

GROUNDWATER CONTOURS
OVERBURDEN
AUGUST 2006

SCALE: AS SHOWN

MARCH 2007

FIGURE 3A

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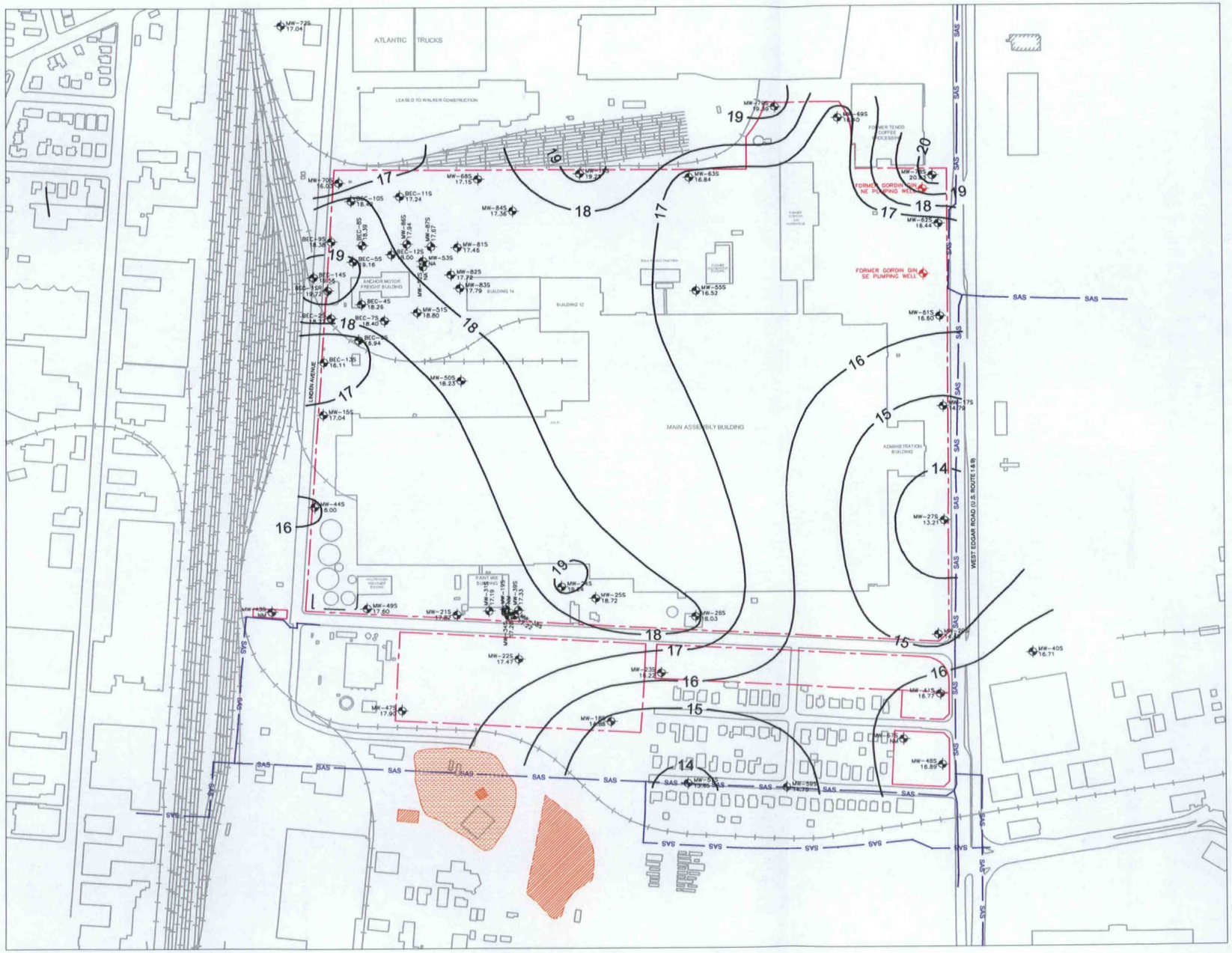

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED OCTOBER 16, 2006.
2. MW-52S AND MW-53S EXCLUDED FROM GROUNDWATER CONTOURS.

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LINDEN ASSEMBLY
LINDEN, NEW JERSEY

GROUNDWATER CONTOURS
OVERBURDEN
OCTOBER 2006

SCALE: AS SHOWN

MARCH 2007

FIGURE 3B

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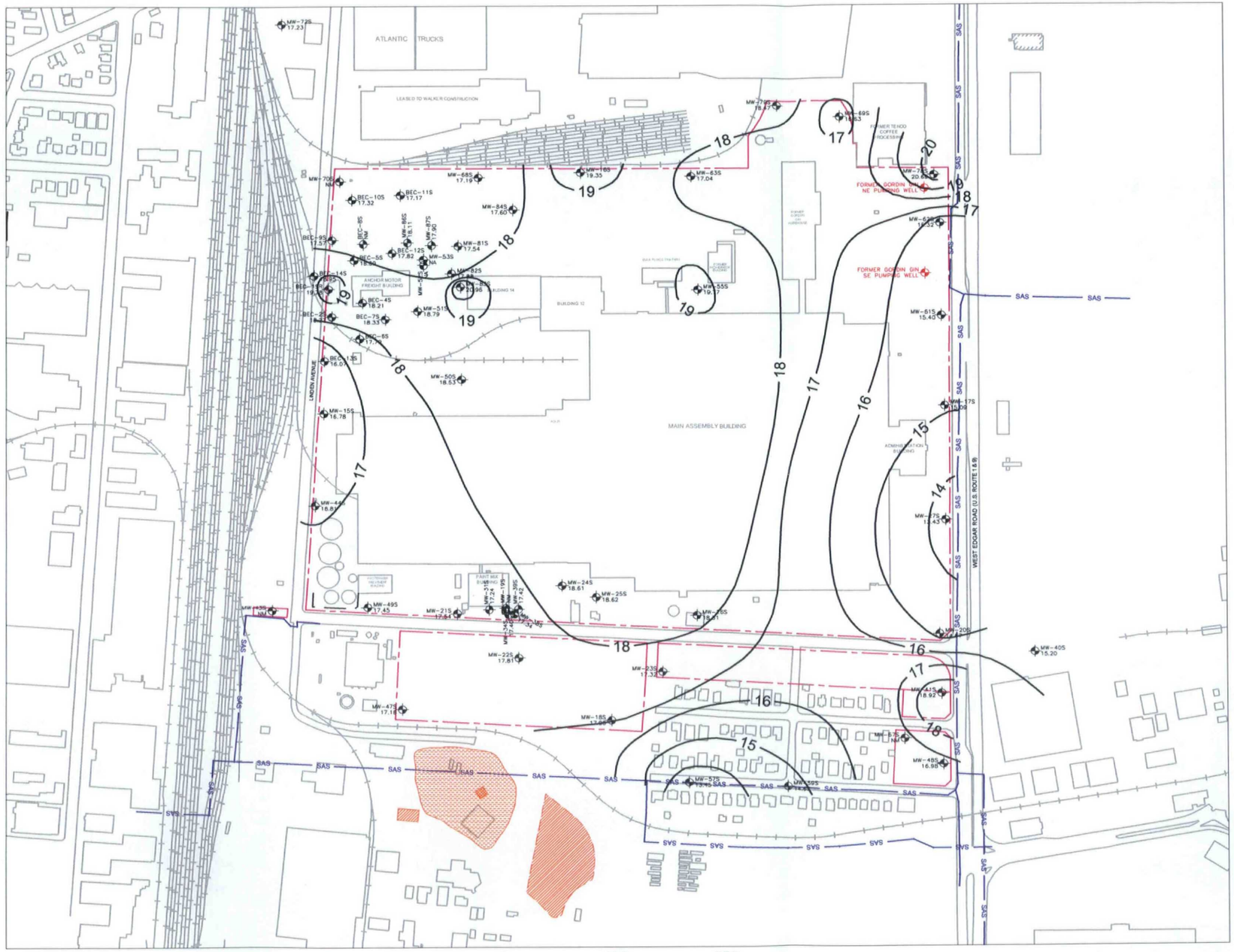

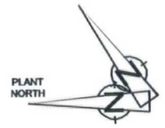

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED DECEMBER 14 & 15, 2006.
2. MW-52S AND MW-53S EXCLUDED FROM GROUNDWATER CONTOURS.

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LINDEN, NEW JERSEY

GROUNDWATER CONTOURS
OVERBURDEN
DECEMBER 2006

SCALE: AS SHOWN

MARCH 2007

FIGURE 3C

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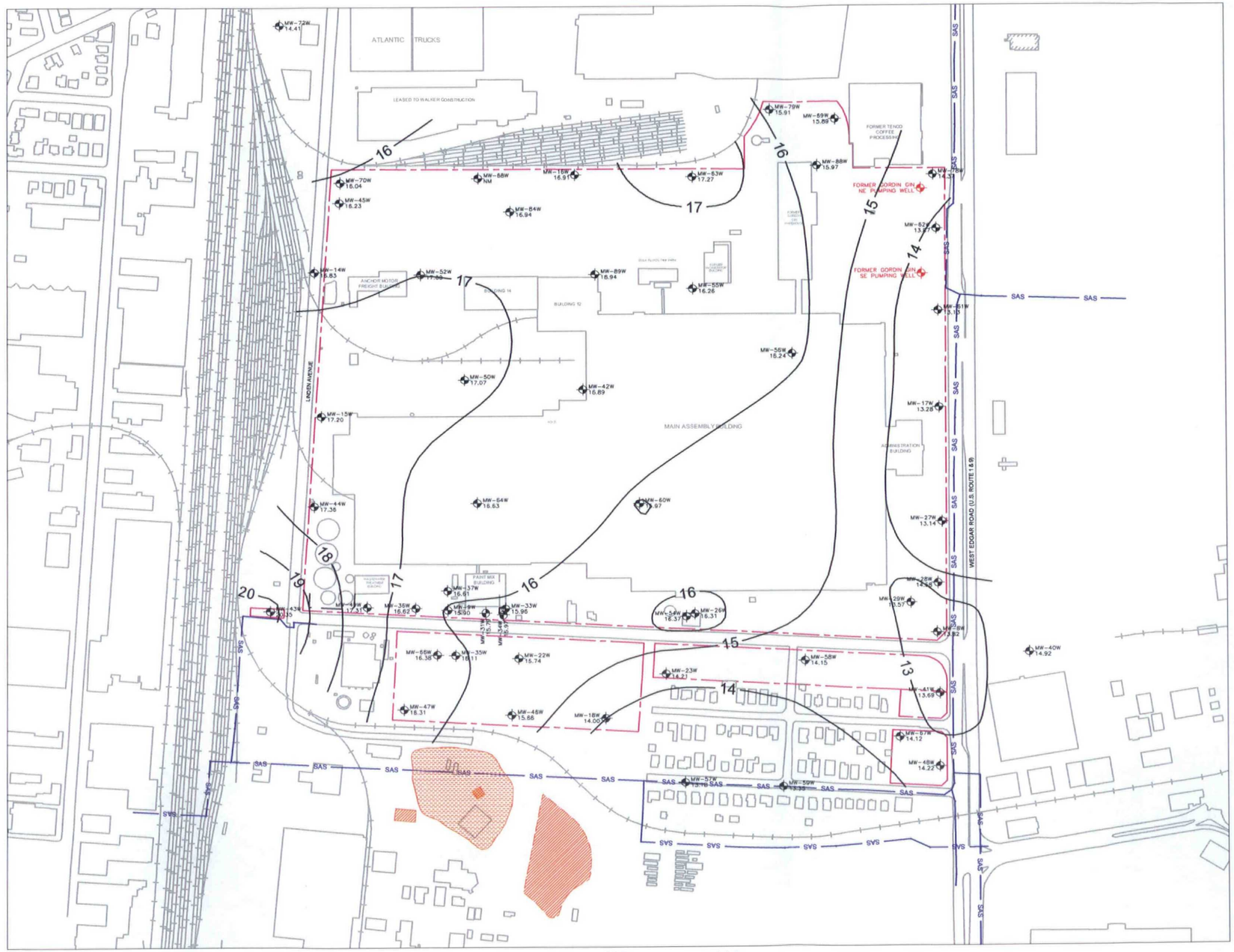

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED AUGUST 4, 2006.
2. MW-30W EXCLUDED FROM GROUNDWATER CONTOURS.

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LINDEN ASSEMBLY
LINDEN, NEW JERSEY

GROUNDWATER CONTOURS
WEATHERED BEDROCK
AUGUST 2006

SCALE: AS SHOWN

MARCH 2007

FIGURE 4A

G:\28499\AUTOCAD\GW CONTOURS\2006_08028499-GW_CONTOURS-AUG-2006_R1.DWG

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED OCTOBER 16, 2006.
2. MW-30W EXCLUDED FROM GROUNDWATER CONTOURS.

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GENERAL MOTORS VEHICLE MANUFACTURING
LINDEN ASSEMBLY
LINDEN, NEW JERSEY

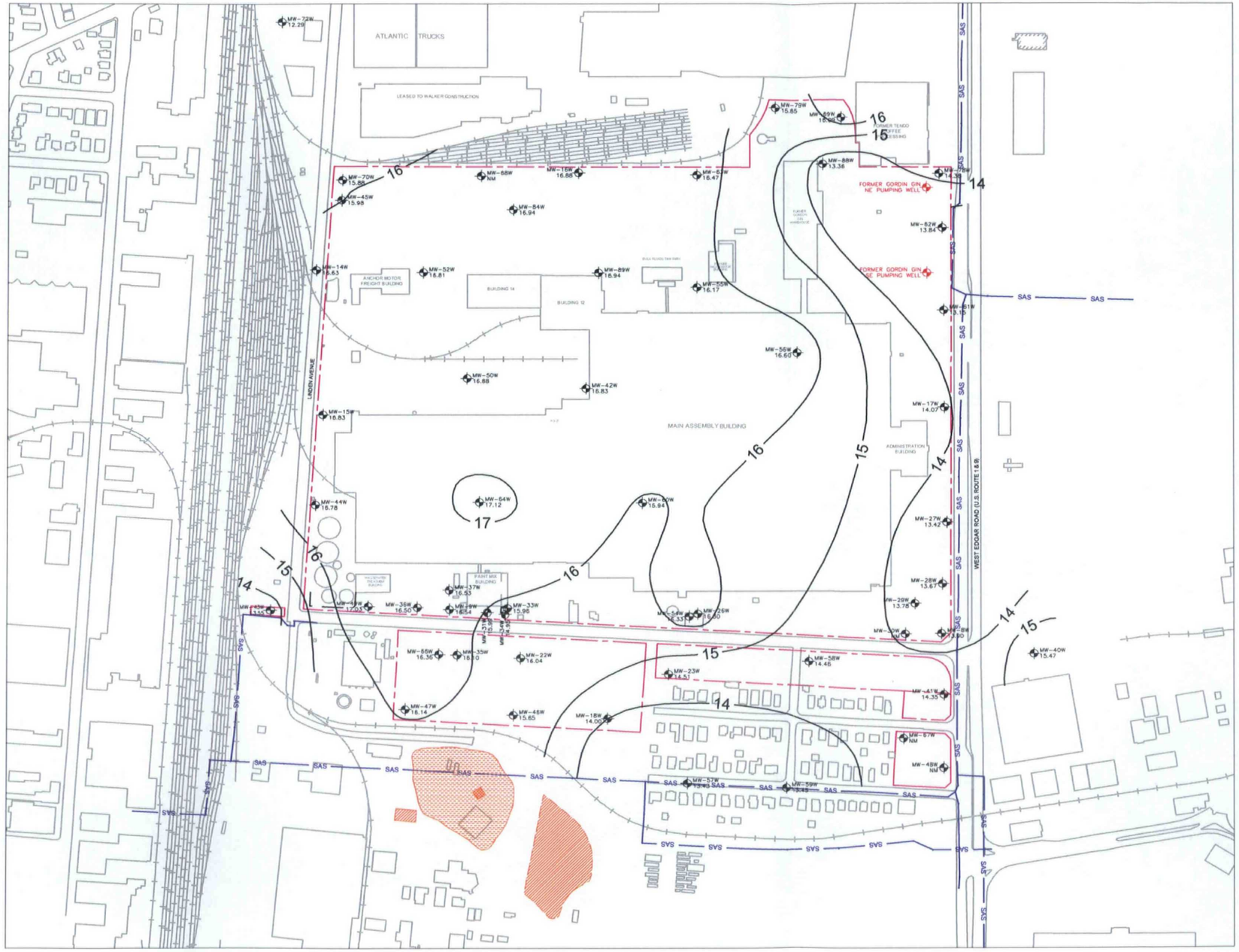
GROUNDWATER CONTOURS WEATHERED BEDROCK OCTOBER 2006

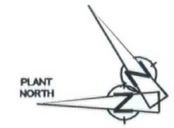
SCALE: AS SHOWN

MARCH 2007

G:\128499\AUTOCAD\GW CONTOURS\2006_10\28499-GW_CONTOURS-OCTOBER-2006_R1.DWG

FIGURE 4B





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED DECEMBER 14 & 15, 2006.
2. MW-30W EXCLUDED FROM GROUNDWATER CONTOURS.

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LINDEN, NEW JERSEY

GROUNDWATER CONTOURS WEATHERED BEDROCK DECEMBER 2006

SCALE: AS SHOWN

MARCH 2007

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FIGURE 4C

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED AUGUST 4, 2006.

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GROUNDWATER CONTOURS
BEDROCK – FLOW ZONE #1
AUGUST 2006

SCALE: AS SHOWN

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FIGURE 5A

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED OCTOBER 16, 2006.

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GROUNDWATER CONTOURS BEDROCK – FLOW ZONE #1 OCTOBER 2006

SCALE: AS SHOWN

MARCH 2007

FIGURE 5B

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PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED DECEMBER 14 & 15, 2006.

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BEDROCK – FLOW ZONE #1
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FIGURE 5C

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PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED AUGUST 4, 2006.

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AUGUST 2006

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FIGURE 6A

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PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
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BEDROCK – FLOW ZONE #2
OCTOBER 2006

SCALE: AS SHOWN

MARCH 2007

FIGURE 6B

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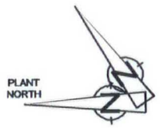

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 0.5 FEET)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED DECEMBER 14 & 15, 2006.

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SCALE: AS SHOWN

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FIGURE 6C

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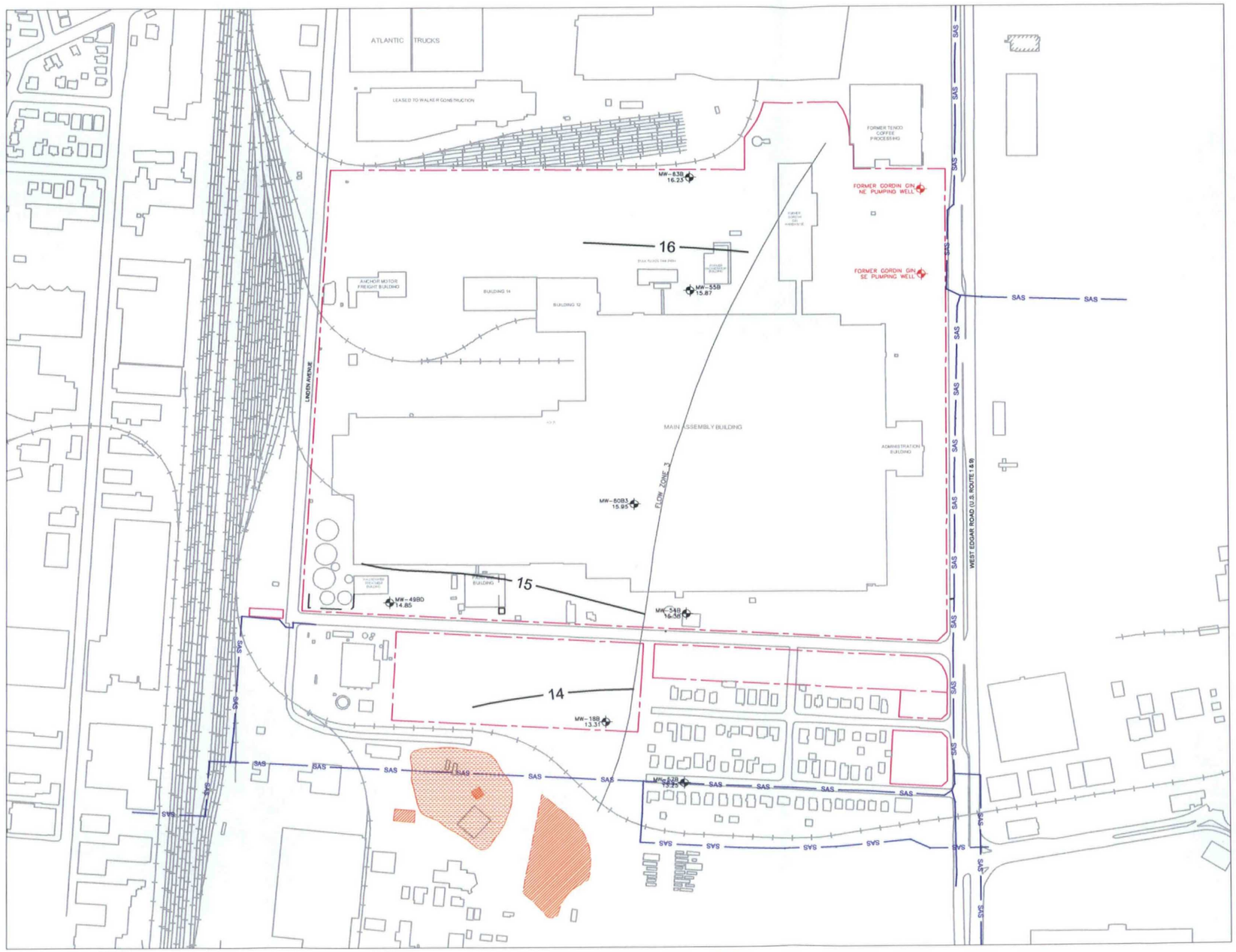

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
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BEDROCK – FLOW ZONE #3
AUGUST 2006

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FIGURE 7A

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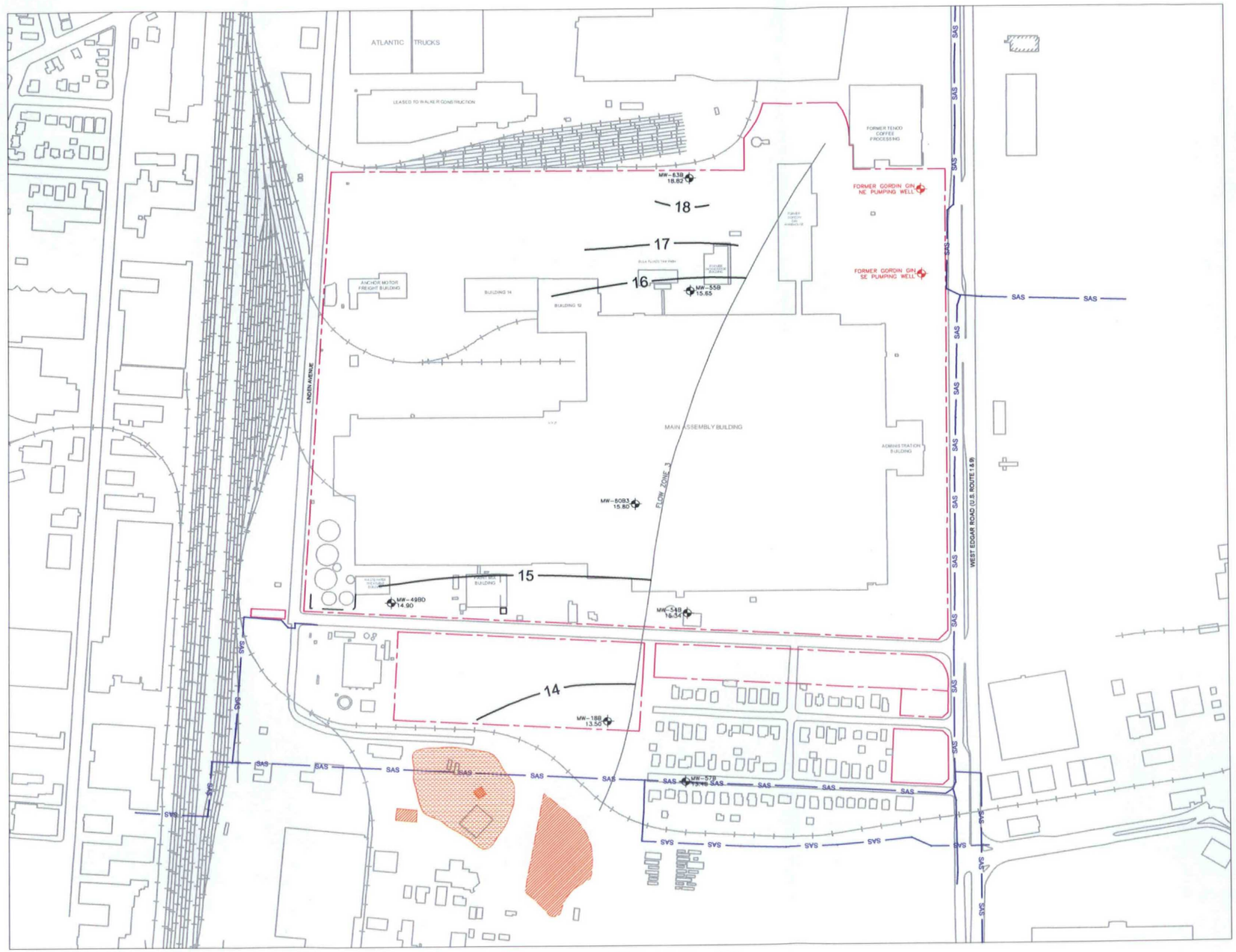

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED OCTOBER 16, 2006.

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BEDROCK – FLOW ZONE #3
OCTOBER 2006

SCALE: AS SHOWN

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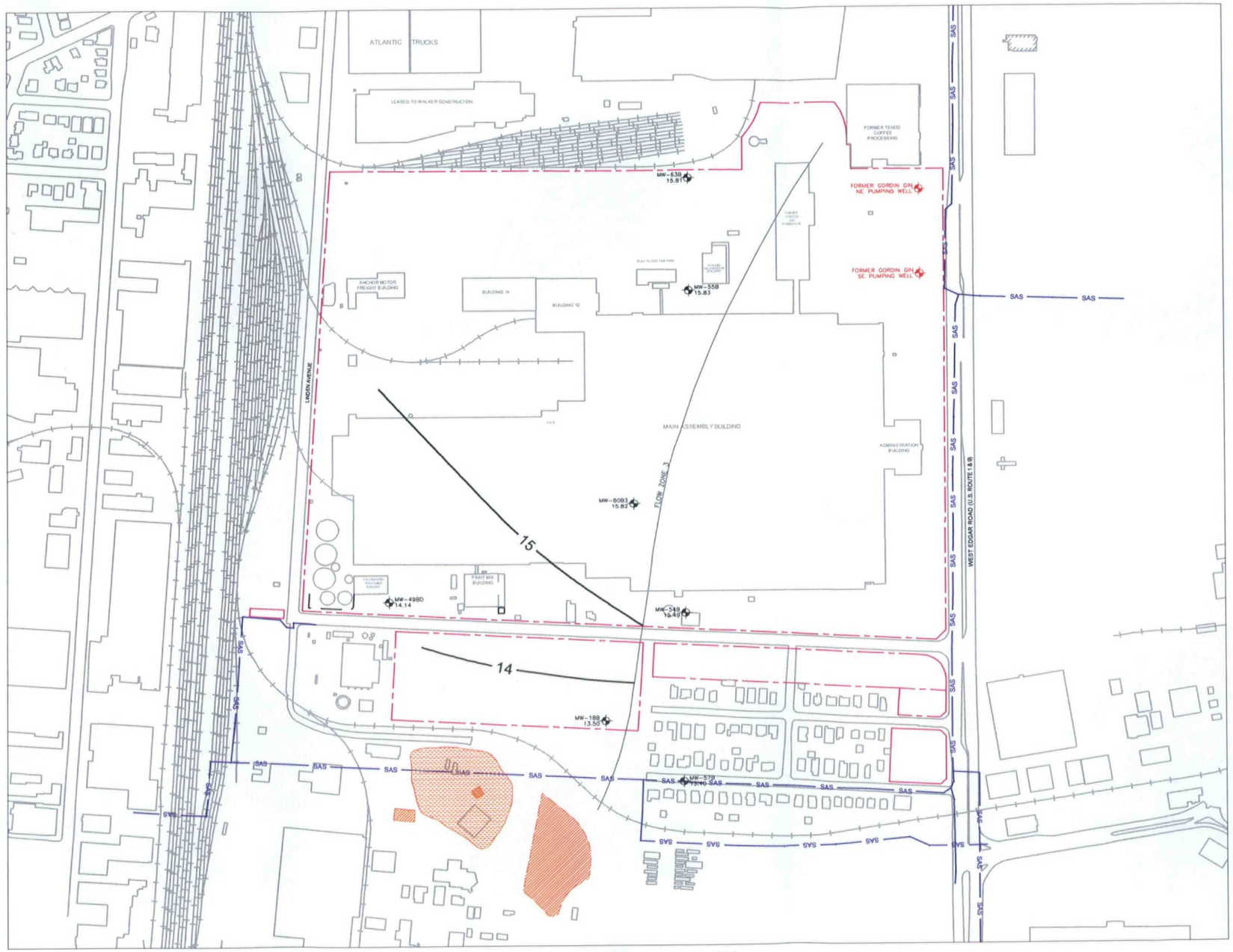
FIGURE 7B



PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
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NOTES:
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FIGURE 7C

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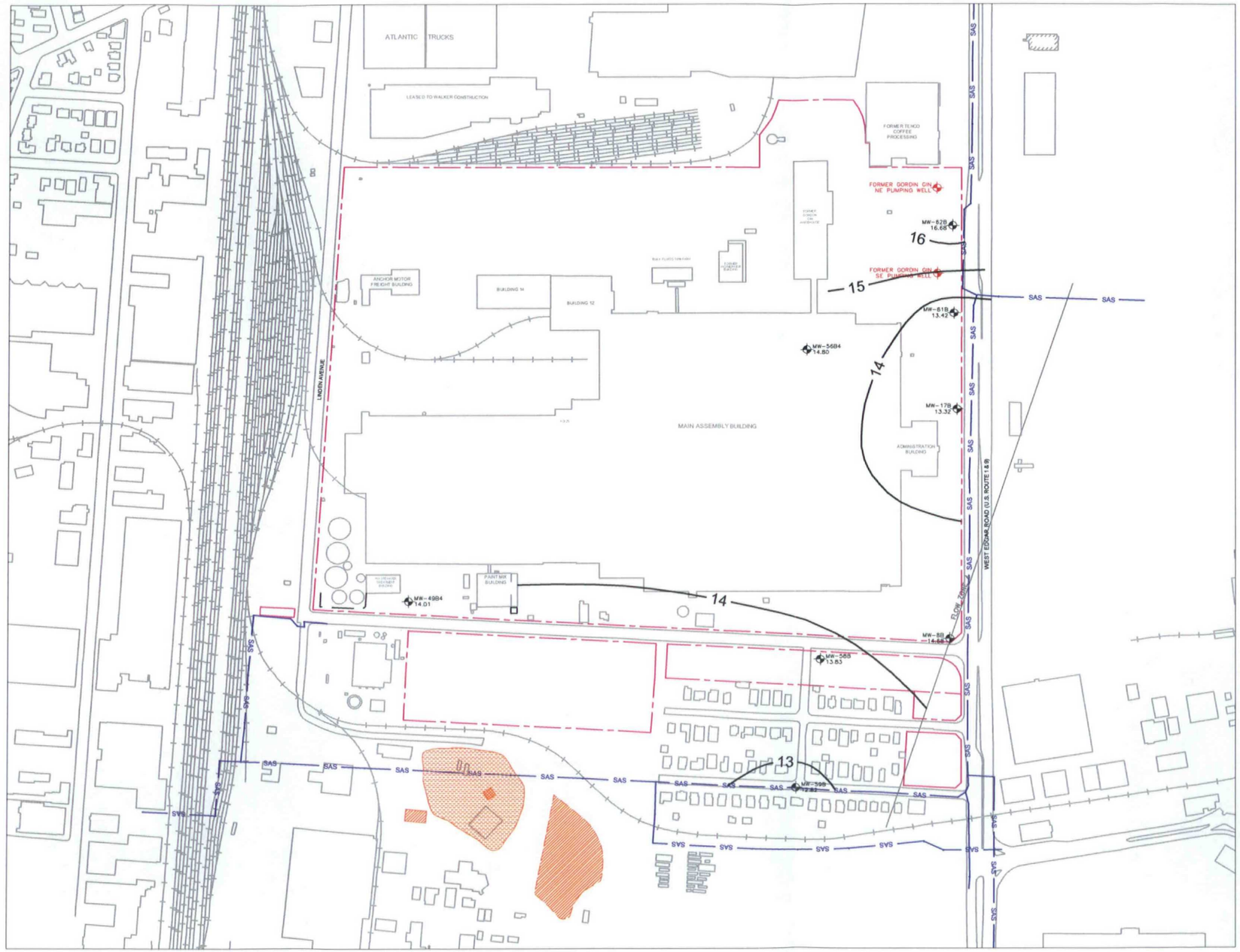

PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
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GROUNDWATER CONTOURS BEDROCK – FLOW ZONE #4 AUGUST 2006

SCALE: AS SHOWN

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FIGURE 8A

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PLANT NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
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FIGURE 8B

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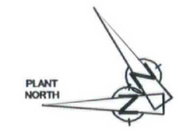

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MONITOR WELL LOCATION
- FORMER GORDIN GIN WELL LOCATION
- 17.0 — GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL: 1.0 FOOT)
- (16.30) GROUNDWATER ELEVATION (FEET MSL)
- SAS — SANITARY SEWERS
- MERCK SWMU 67 NORTH PLANT LANDFILL
- MERCK SWMU 27 (APPROXIMATE LOCATION) CONTAINER STORAGE
- MERCK SWMU 72 PIPE LEAK AREA

NOTES:
1. WATER LEVELS OBTAINED DECEMBER 14 & 15, 2006.

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GROUNDWATER CONTOURS BEDROCK – FLOW ZONE #4 DECEMBER 2006

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FIGURE 8C

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APPENDIX A

eDAT Analytical Data Summary CD